Claims

We claim:

1. A method of converting interlaced video signals to progressive video signals, said method comprising:

a) receiving an interlaced video signal representing a luma component specifying luma lines and a chroma component specifying chroma lines, wherein said chroma component specifies approximately one-half the number of lines of said luma component;

b) decoding said interlaced video signal and increasing the number of said chroma lines to approximately the same as the number of said luma lines;

c) decreasing the number of said chroma lines of said interlaced video signal back to approximately one-half of the number of said luma lines, whereby said increasing of chroma lines is substantially reversed;

d) deinterlacing said interlaced video signal, whereby said deinterlacing results in a progressive video signal representing a luma component specifying luma lines and a chroma component specifying chroma lines; and

e) further processing said progressive video signal.

2. The method of claim 1, wherein said step (e) comprises making substantially equal the number of said luma lines and the number of said chroma lines of said progressive video signal.

3. The method of claim 2, wherein said step (e) further comprises vertical format converting said progressive video signal for displaying on a display having a vertical resolution different from that of said progressive video signal.

4. The method of claim 2, wherein said step (e) further comprises providing said processed progressive video signal to an imaging system.

5. The method of claim 4, wherein said imaging system comprises a liquid crystal on silicon imager.

6. The method of claim 4, wherein said imaging system further comprises a high definition television receiver.

7. The method of claim 1, wherein said interlaced video signal of said step (a) is a 4:2:0 formatted video signal.

8. The method of claim 1, wherein said step (b) results in an interlaced 4:2:2 formatted video signal.

9. The method of claim 1, wherein said step (c) results in an interlaced 4:2:0 formatted video signal.

10. A method of converting interlaced Moving Picture Experts Group (MPEG) video signals to progressive video signals, said method comprising:

receiving an interlaced 4:2:0 formatted video signal;

decoding said interlaced 4:2:0 formatted video signal and converting said video signal to an interlaced 4:2:2 formatted video signal;

re-converting said interlaced 4:2:2 formatted video signal to an interlaced 4:2:0 formatted video signal; and

deinterlacing said interlaced 4:2:0 formatted video signal resulting in a 4:2:0 formatted progressive video signal.

11. A method of converting interlaced video signals to progressive video signals, said method comprising:

a) receiving an interlaced video signal representing a luma component specifying luma lines and a chroma component specifying non-interpolated chroma lines;

b) decoding said interlaced video signal and interpolating said non-interpolated chroma lines to produce a processed chroma component specifying interpolated and said non-interpolated chroma lines;

c) deinterlacing said decoded interlaced video signal based on said luma lines and said non-interpolated chroma lines, whereby said deinterlacing results in a progressive video signal representing a luma component specifying luma lines and a chroma component specifying chroma lines; and

d) further processing said progressive video signal.

12. The method of claim 11, wherein said step (c) comprises ignoring said interpolated chroma lines.

13. The method of claim 11, wherein said step (d) comprises making substantially equal the number of said luma lines and the number of said chroma lines of said progressive video signal.

14. The method of claim 13, wherein said step (d) further comprises vertical format converting said progressive video signal for displaying on a display having a vertical resolution different from that of said progressive video signal.

15. The method of claim 14, wherein said step (d) further comprises providing said vertical format converted progressive video signal to an imaging system.

16. The method of claim 15, wherein said imaging system comprises a liquid crystal on silicon imager.

17. The method of claim 15, wherein said imaging system further comprises a high definition television receiver.

18. The method of claim 11, wherein said interlaced video signal of said step (a) is a 4:2:0 formatted video signal.

19. The method of claim 11, wherein said step (b) results in a 4:2:2 formatted video signal which represents at least in part said processed chroma component specifying alternate said interpolated chroma and said non-interpolated chroma,

such that said processed chroma component includes all of said non-interpolated chroma lines.

20. The method of claim 11, wherein said step (c) results in a 4:2:0 formatted video signal.

21. The method of claim 20, wherein said step (d) comprises converting said 4:2:0 formatted progressive video signal to a 4:2:2 formatted video signal.

22. A Moving Picture Experts Group (MPEG) decoder comprising a chroma vertical interpolator configured to receive an interlaced video signal representing a luma component specifying luma lines and a chroma component specifying non-interpolated chroma lines, and to decode said interlaced video signal and interpolate said non-interpolated chroma lines to produce a processed chroma component specifying interpolated and said non-interpolated chroma lines.

23. The Moving Picture Experts Group (MPEG) decoder of claim 22, wherein said processed chroma component specifies alternate said interpolated chroma lines and said non-interpolated chroma lines, such that said processed chroma component includes all of said non-interpolated chroma lines.

24. A system for converting interlaced Moving Picture Experts Group (MPEG) video signals to progressive video signals, said system comprising:

a decoder configured to receive an interlaced video signal representing a luma component specifying luma lines and a chroma component specifying chroma lines, wherein said chroma component specifies approximately one-half the number of lines of said luma component, and to decode said interlaced video signal and increase the number of said chroma lines to approximately the same as the number of said luma lines; and

a deinterlacer configured to first decrease the number of said chroma lines of said interlaced video signal back to approximately one-half of the number of said

luma lines, whereby said increase of chroma lines is substantially reversed, and then to deinterlace said interlaced video signal.

25. The system of claim 24, further comprising:

a processor configured to process said deinterlaced video signal for display on a predetermined imager; and

a liquid crystal on silicon imager for displaying said deinterlaced video signal.

26. The system of claim 24, further comprising:

a high definition television receiver configured to further process said deinterlaced video signal.

27. A system for converting interlaced Moving Picture Experts Group (MPEG) video signals to progressive video signals, said system comprising:

a decoder configured to receive an interlaced video signal representing a luma component specifying luma lines and a chroma component specifying non-interpolated chroma lines, and decode said interlaced video signal and interpolate said non-interpolated chroma lines to produce a processed chroma component specifying interpolated and said non-interpolated chroma lines; and

a deinterlacer configured to deinterlace said decoded interlaced video signal based on said luma lines and said non-interpolated chroma lines.

28. The system of claim 27, further comprising:

a liquid crystal on silicon imager for displaying said deinterlaced video signal.

29. The system of claim 27, further comprising:

a high definition television receiver having a liquid crystal on silicon imager for displaying said deinterlaced video signal.